P32

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,118	09/10/1999	WILLIAM F. FOOTE	SUN1P250/P39	3725

22434 7590 07/31/2003

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER
VO, LILIAN

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 07/31/2003 10

Please find below and/or attached an Office communication concerning this application or proceeding.

PRA

Office Action Summary	Application No.	Applicant(s)	
	09/394,118	FOOTE, WILLIAM F.	
	Examiner	Art Unit	
	Lilian Vo	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *09 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 15 -27, and 29* is/are rejected.

7)☒ Claim(s) *14, and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This office action in response to application filed on September 10, 1999. Claims 1 - 29 are presented for examination. Claims 30 – 37 have been cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1 – 4, 13, 17, 20, 21, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Culbert (U.S. Pat No. 5,838,968).

Regarding **claims 1 and 20**, Culbert discloses a method for managing resource usage of a particular resource by a set of related code (fig. 4, codes executed as tasks), the method comprising:

associating a resource indicator (fig. 2, resource indicator 220, col. 6, line 51 – col. 7, line 2,) with the related code that indicates an amount of resource usage of the particular resource by the related code (col. 6, line 63 – col. 7, line 2, maximum number of allocable units, 230, and the currently allocated units 240), (col. 3, lines 20 – 58, "...keeping track of actual system resource utilization through periodic measuring by updating the current task utilization record to reflect the consumption of the of the plurality of system resources, and by using this information to allocate or deallocate resources from tasks in order to satisfy system resource requests". In order for each task to perform its specific function, related code must be used to program each of the tasks. Hence, related code is considered inherently included in each of the task execution, which consume resources); and

updating (col. 7, lines 20 – 27, updates the usage value) the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (col. 11, lines 36 – 44, memory use increases).

Regarding **claim 2**, Culbert discloses a method as recited in claim 1 wherein the resource indicator's amount represents an absolute value of the resource usage (col. 7, lines 14 – 18, kilobytes needed for memory 100).

Regarding **claim 3**, Culbert further discloses a method as recited in claim 1 wherein the resource indicator's amount represents a proportional value of the resource usage (col. 7, lines 20 – 27, maintaining current information based on actual resource usage, col. 8, lines 42 – 46, updated with actual resource usage measurements).

Regarding **claims 4 and 21**, Culbert discloses a method as recited in claims 1 and 20 further comprising:

associating the related code with each resource portion of the particular resource that is allocated for the related code (abstract: The system and method manage an arbitrary set of system resources and globally optimize resource allocation across system tasks in a dynamic fashion, according to a system specified performance model. Resource allocated to system tasks, whose codes are executed. See also col. 5, lines 31 – 36, col. 6, line 59 – col. 7, line 13, resource manager controls resource allocation, and col. 3, lines 46 - 54); and

disassociating the related code with each resource portion of the particular resource that is deallocated for the related code (col. 3, lines 45 – 54, deallocate resources from tasks in order to satisfy system resource requests),

wherein the resource indicator is increased when a resource portion is allocated (col. 6, line 65 – col. 7, line 2, resource indicator showing the currently allocated unit) for the related code.

As per the feature wherein the resource indicator is decreased when a resource portion is deallocated and increased when a resource portion is allocated for the related code, as mentioned above, since the resource indicator shows the current allocated units or an index, it inherently indicates the resource allocation, whether increased or decreased, as claimed.

Regarding **claims 13 and 26,** Culbert further discloses a method as recited in claims 1 and 20 wherein the particular resource is CPU usage or network usage (col. 8, lines 11 – 18, CPU consumption is resource usage).

Regarding **claim 17**, Culbert discloses a method for managing resource usage of a particular resource by a set of related code (fig. 4, codes executed as tasks), the method comprising:

associating a resource indicator (fig. 2, resource indicator 220, col. 6, line 63 – col. 7, line 2,) with the related code (resource manager 170, col. 6, lines 51 – 58) that indicates an amount of resource usage of the particular resource by the related code (col. 6, line 63 – col. 7, line 2, maximum number of allocable units, 230, and the currently allocated units 240); and

updating (col. 7, lines 20 – 27, updates the usage value) the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (col. 11, lines 36 – 44, memory use increases).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5 – 7, 14, 22, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat No. 5,838,968) in view of Nilsen (U.S. Pat. No. 6,438,573).

Regarding **claims 5 and 22**, although Culbert discloses the method as recited in claims 4 and 21 except further comprising indicating an error and not allocating the particular resource when the resource indicator is above the maximum predetermined threshold. Nevertheless, Nilsen discloses in col. 21, lines 44 – 47, the method invoking 'a task informs the

real-time executive that it prefers to receive an OutOfMemoryError exception whenever one of its memory allocation requests cannot immediately be satisfied'. As resource allocation requests cannot be immediately satisfied, it is considered obvious to one of ordinary skill in the art that resource is limited and hence having a maximum amount. Furthermore, as resource has been exhaustively allocated, OutOfMemoryError indication is received by the real-time executive. This can be understood as indicating an error and not allocating the particular resource ..., as claimed in claim 5. As a result, it is also considered obvious to one of ordinary skill in the art, to realize the feature in which, OutOfMemoryError would not exist as memory allocation request can be immediately satisfied, hence implying that allocating the particular resource to the related code is an obvious fact when the resource indicator is below a maximum predetermined threshold.

Therefore, it is considered obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that resource can be better managed for efficiency purposes (Nilsen: col. 21, lines 59 – 61).

Regarding **claim 6**, see citation above in claim 5 regarding OutOfMemoryError exception.

Regarding **claim 7**, although Culbert discloses a method as recited in claim 4, except wherein the related code is disassociated through a garbage collection procedure. Nevertheless, Nilsen discloses the garbage collector reclaiming the memory (col. 21, lines 13 – 17). Therefore, it would have been obvious for one having an ordinary skill in the art, at the time the invention

was made to incorporate this feature to Culbert's invention so that the additional allocation request can be satisfied (col. 22, lines 3 – 6).

Regarding **claims 14 and 27**, Culbert further discloses a method which associates a threshold with a particular resource and the related code (fig. 2, resource master list, resource indicator, and max units, all of which means resource indicator with max units for each resource). However, Culbert didn't clearly show the step of indicating that the related code's priority for CPU usage is decreased when the amount of resource usage of the particular resource by the related code exceeds the threshold. Instead, Culbert shows that when the resource is constrained and tasks have difficulty accessing the needed resource, the resource manager must decide whether to lower the available resources for current tasks or fail the task allocation request (col. 9, lines 15 – 20). This obviates the claimed feature in which code's priority for usage is decreased when the resource is not available (exceeds the threshold).

6. Claims 8 – 12, 18, 19, and 23 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat 5,838,968) in view of Mayle et al. (U.S. Pat. 6,182,022).

Regarding **claims 8 and 23**, the examiner takes an Official Notice that the particular resource is selected from a group consisting a memory usage, open file usage, open socket usage, and monitor usage are considered well-known in the art. It would be obvious for one of ordinary skill in the art to consider including memory usage, open file usage, open socket usage, and monitor usage as the resources so that additional resources can be available for use in the computing environment.

Regarding **claim 9**, Culbert further discloses a method as recited in claim 8 wherein the resource indicator indicates a percentage of the particular resource that is utilized by the related code (col. 8, lines 3 – 18, 1% CPU utilization).

Regarding **claims 10 and 24**, although Culbert discloses a method as recited in claims 8 and 23, he didn't clearly teach of the additional limitation as claimed. Nevertheless Mayle et al. teach the step of:

associating a plurality of thresholds with a the particular resource and the related code (col. 3, lines 7 – 11, current normal threshold curve, service level maximum threshold, and minimum threshold. Col. 8, lines 20 – 25, percent system utilization being monitor); and

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code exceeds a first one of the thresholds (col. 4, lines16 – 19, receive an event notification when an attribute exceeds its corresponding current normal threshold, col. 4, lines 36 – 52, , current normal threshold 304 is recalculated periodically. Fig. 3, collected metric 308 exceeds current metric threshold 304 during T1 period).

Therefore, it would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that system administrator is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

Regarding **claims 11 and 25**, although Culbert discloses a method as recited in claims 8 and 23, he didn't clearly teach of the additional limitation as claimed. Nevertheless, the reference of Mayle et al. further teaches the step of:

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code drops below a second one of the thresholds that has a different value than the first threshold (col. 4, lines16 – 19, receive an event notification when an attribute falls short of its corresponding current normal threshold, col. 4, lines 36 – 52, current normal threshold 304 is recalculated periodically. Fig. 3, collected metric 326 drops below current metric threshold 304 during time T3 period which has a different value than the first threshold during T1 period).

Therefore, it would have been obvious for one of ordinary skill in the art, at the time the invention was made, incorporate this feature to Culbert's invention so that system administrator is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

Regarding **claim 12**, although Culbert discloses a method as recited in claim 8, he didn't clearly teach of the additional limitation as claimed. Nevertheless, the reference of Mayle et al. teaches the step of:

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code drops below the first threshold (receive an event notification when an attribute falls short of its corresponding current normal threshold, col. 4, lines16 – 19, current normal threshold 304 is recalculated periodically, col. 4, lines 36 – 52, fig. 3, collected metric 309 drops below current metric threshold 304 during time T1 period).

Therefore, it would have been obvious for one of ordinary skill in the art, at the time the invention was made, incorporate this feature to Culbert's invention so that system administrator

is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

Regarding **claim 18**, Culbert further discloses a method as recited in claim 17, wherein the resource include memory usage and CPU usage (col. 7, lines 2 – 6). However, Culbert did not clearly mention the network usage as further limited as claimed. Nonetheless, the reference of Mayle et al. readily disclose of a network computer system (col. 3, lines 34 – 38). Therefore, it would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that a network system management program can executes on a network system to collect statistical samples from the network environment (col. 3, lines 45 – 49).

Regarding **claim 19**, the examiner takes an Official Notice that resources including open file usage and open socket usage is consider well known in the art. It would be obvious for one of ordinary skill in the art to consider including file usage and socket usage as the resources so that additional resources can be available for use in the computing environment.

7. Claims 16 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat No. 5,838,968) in view of McNally et al (U.S. Pat. No. 6,259,448).

Regarding **claims 16 and 29**, although Culbert discloses a method a recited in claims 1 and 20 except wherein the related code is configured to be executed on behalf of an applet in the form of threads. Nevertheless, this limitation is taught by the reference of McNally (Java applet is executed, col. 8, lines 22 – 25, fig. 2A, threads 17). Therefore, it would have been obvious for

one of ordinary skill in the art, at the time the invention was made to incorporate this feature to Culbert's invention so that an automation process is preferably executable in a runtime environment installed on or associated with a given resource (col. 8, lines 19 – 23).

Allowable Subject Matter

8. Claims 15 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed 5/9/03 have been fully considered but they are not persuasive at least for the reasons set forth above, paragraph 3.

10. As per applicant's remarks (page 9, lines 22 – 23), which is also noted in the amended claims 1 and 20, argued that Culbert reference fails to teach or suggest tracking the usage for each set of related code, the Office respectfully disagree, as stated in claims 1 and 20 rejection above. Culbert's invention clearly discloses the resource utilization and resource consumption for each task (col. 3, lines 20 – 57). In other words, each of the tasks is executed with code to perform their specific function. Thus, resource utilization and resource consumption for each of the tasks (includes related code) are disclosed in the reference.

Further, regarding applicant's remark about "...claims 1 and 20 are patentable over Abe" (page 9, line 23 – 24), since Abe was never used in any of the rejections, the Examiner believes that is a typo and Abe should be Culbert.

11. Because Applicant have failed to challenge any of the Examiner's "Official Notices" in a proper and seasonably manner, they are now considered as admitted prior art. See MPEP 2144.03.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 703-305-7864.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Lilian Vo
Examiner
Art Unit 2127

lv
July 24, 2003

MAJID BANANKHAH
PRIMARY EXAMINER